

IN THE CLAIMS:

- 1 1. (Currently Amended) A network device for use in a computer network carrying net-
2 work traffic, the network device comprising:
3 a traffic scheduler having one or more resources for use in forwarding network
4 traffic received at the device at different rates;
5 a classification engine configured to identify received network traffic based upon
6 predefined criteria; and
7 a resource reservation engine in communicating relationship with the traffic
8 scheduler and the classification engine,
9 wherein, in response to a first request to reserve resources for a given traffic flow,
10 the resource reservation engine allocates one or more resources to the given traffic flow,
11 but does not make the one or more allocated resources available to the given traffic flow
12 until receiving a ~~message~~ message indicating that a destination entity transmitted a re-
13 sponse message to a source entity.
- 1 2. (Previously presented) The network device of claim 1 wherein, in response to a second
2 request to reserve resources, the resource reservation engine makes the one or more pre-
3 viously allocated resources available to the given traffic flow.
- 1 3. (Cancelled)
- 1 4. (Cancelled)
- 2 5. (Previously presented) The network device of claim 2 wherein:
3 the resource reservation engine utilizes a modified Resource reSerVation Protocol
4 (RSVP) specification standard, and

1 the first and second reservation requests are modified RSVP Reservation (Resv)
2 messages.

1 6. (Previously presented) The network device of claim 5 wherein:
2 the first and second modified Resv messages each include a two phase reservation
3 flag,
4 in the first modified Resv message, the two phase reservation flag is asserted, and
5 in the second modified Resv message, the two phase reservation flag is deas-
6 serted.

1 7. (Cancelled)

1 8. (Previously presented) The network device of claim 2 wherein packets corresponding
2 to the given traffic flow are forwarded by the device in a best efforts manner after receipt
3 of the first request and prior to receipt of the second request.

1 9. (Previously presented) The network device of claim 8 wherein packets corresponding
2 to the given traffic flow are forwarded with the one or more allocated resources after re-
3 ceipt of the second request.

1 10. (Currently Amended) In a computer network having a plurality of entities intercon-
2 nected by a plurality of intermediate network devices having one or more resources for
3 use in forwarding network traffic, a method for providing end-to-end resource reserva-
4 tions along a route between two or more entities, the method comprising the steps of:
5 receiving a first resource reservation message at a given intermediate network de-
6 vice disposed along the network route, the first resource reservation message identifying
7 a traffic flow between the two or more entities and requesting a reservation of resources;

8 in response to receiving the first resource reservation message, allocating one or
9 more of the device's resources for use in forwarding network traffic between the two or
10 more entities; and

11 withholding the allocated resources from being applied to the traffic flow between
12 the two or more entities until the plurality of intermediate network devices receive a ~~mas-~~
13 sage message indicating that a destination entity transmitted a response message to a
14 source entity.

1 11. (Original) The method of claim 10 further comprising the step of:

2 receiving a second resource reservation message for the traffic flow between the
3 two or more entities; and

4 in response to receiving the second resource reservation message, making the al-
5 located resources available for use in forwarding the traffic flow between the two or more
6 entities.

1 12. (Cancelled)

1 13. (Previously presented) The method of claim 11 wherein the first and second resource
2 reservation messages are modified Resource reSerVation Protocol (RSVP) Reservation
3 (Resv) messages.

1 14. (Cancelled)

1 15. (Previously presented) The method of claim 11 wherein the steps of allocating re-
2 sources, withholding resources and making allocated resources available are performed at
3 each intermediate network device disposed along the route between the two or more enti-
4 ties.

1 16. (Previously Presented) A method for providing resource reservations along a route
2 through a computer network between two or more entities, the method comprising the
3 steps of:

4 generating a first resource reservation message identifying a traffic flow and re-
5 questing a reservation of resources;

6 configuring the first resource message to include a two phase reservation flag; and

7 asserting the two phase reservation flag so that resources within the network will
8 be allocated, but not made available to the identified traffic flow until a destination entity
9 transmits a response message to a source entity.

1 17. (Previously presented) The method of claim 16 further comprising the steps of:

2 generating a second resource reservation message identifying the traffic flow;

3 configuring the second resource message to include a two phase reservation flag;

4 and

5 deasserting the two phase reservation flag so that the allocated resources are made
6 available for application to the identified traffic flow.

1 18. (Previously presented) The network device of claim 2, further comprising:

2 a timer to measure a predetermined time period, wherein the resource reservation
3 engine discards the resources if the second reservation message is not received prior to
4 expiration of the predetermined time period.

1 19. (Previously presented) A router, comprising:

2 means for receiving a first resource reservation message, the first resource reser-
3 vation message identifying a traffic flow between two or more entities requesting a reser-
4 vation of resources;

5 means for allocating, in response to the first resource reservation message, one or
6 more of the router's resources for use in forwarding network traffic between the two or

7 more entities, but not making available the one or more router's resources to the identi-
8 fied traffic flow;
9 means for receiving a second resource reservation message; and
10 means for making available, in response to the second resource reservation mes-
11 sage, the one or more router's resources to the identified traffic flow.

1 20. (Previously presented) A computer readable media, comprising:
2 the computer readable media having information written thereon, the information
3 having instructions for execution on a processor for the practice of a method for operating
4 a router, the method having the steps of,
5 receiving a first resource reservation message, the first resource reservation mes-
6 sage identifying a traffic flow between two or more entities requesting a reservation of
7 resources;
8 allocating, in response to the first resource reservation message, one or more of
9 the router's resources for use in forwarding network traffic between the two or more enti-
10 ties, but not making available the one or more router's resources to the identified traffic
11 flow;
12 receiving a second resource reservation message; and
13 making available, in response to the second resource reservation message, the one
14 or more router's resources to the identified traffic flow.

1 21. (Previously presented) A method for operating a router, comprising:
2 generating a first resource reservation message identifying a traffic flow for which
3 a resource reservation is requested along a network path between two entities; and
4 indicating by the first resource reservation message that resources within the net-
5 work are requested to be allocated, but not made available to the identified traffic flow.

1 22. (Previously presented) The method of claim 21 further comprising:
2 generating a second resource reservation message identifying the traffic flow; and

3 indicating by the second resource reservation message that the allocated resources
4 are to be made available for application to the identified traffic flow.

1 23. (Previously presented) The method of claim 22 further comprising:
2 discarding the resources upon expiration of a predetermined time period, if the
3 second reservation message is not received prior to expiration of the predetermined time
4 period.

1 24. (Previously presented) A router, comprising:
2 means for generating a first resource reservation message identifying a traffic
3 flow for which a resource reservation is requested along a network path between two en-
4 tities; and
5 means for indicating by the first resource reservation message that resources
6 within the network are requested to be allocated, but not made available to the identified
7 traffic flow.

1 25. (Previously presented) The router of claim 24 further comprising:
2 means for generating a second resource reservation message identifying the traffic
3 flow; and
4 means for indicating by the second resource reservation message that the allo-
5 cated resources are to be made available for application to the identified traffic flow.

1 26. (Previously presented) The router of claim 25 further comprising:
2 means for discarding the resources upon expiration of a predetermined time pe-
3 riod, if the second reservation message is not received prior to expiration of the prede-
4 termined time period.

1 27. (Previously presented) A computer readable media, comprising:

2 the computer readable media having information written thereon, the information
3 having instructions for execution on a processor for the practice of a method for provid-
4 ing resource reservations along a route between two or more entities, the method having
5 the steps of,

6 generating a first resource reservation message identifying a traffic flow to re-
7 quest a reservation of resources in a network between two or more entities; and

8 indicating by the first resource reservation message that resources within the net-
9 work will be allocated, but not made available to the identified traffic flow.

1 28. – 39. (Cancelled)

1 40. (Previously Presented) A method for operating a router, comprising:

2 receiving a first RSVP message transmitted by a source entity to a destination en-
3 tity;

4 allocating resources between the source entity and the destination entity, in re-
5 sponse to the first RSVP message, and not making the resources available;

6 receiving, after the destination entity rings, a second RSVP message from the des-
7 tination entity; and

8 making available the resources in response to receiving the second RSVP mes-
9 sage.

1 41. (Previously Presented) The method of claim 40, further comprising:

2 including in the second RSVP message a phase reservation flag, and when the
3 phase reservation flag is asserted, making available the resources that were allocated.

1 42. (Previously Presented) The method of claim 40, further comprising:
2 transmitting an intermediate RSVP message before the second RSVP message,
3 from the destination entity to the source entity, reserving resources from the destination
4 entity to the source entity.

1 43. (Previously Presented) A router, comprising:
2 means for receiving a first RSVP message transmitted by a source entity to a des-
3 tination entity;
4 means for allocating resources between the source entity and the destination en-
5 tity, in response to the first RSVP message, and not making the resources available;
6 means for receiving, after the destination entity rings, a second RSVP message
7 from the destination entity; and
8 means for making available the resources in response to receiving the second
9 RSVP message.

1 44. (Previously Presented) The router of claim 43, further comprising:
2 means for including in the second RSVP message a phase reservation flag, and
3 when the phase reservation flag is asserted, making available the resources that were al-
4 located.

1 45. (Previously Presented) The router of claim 43, further comprising:

2 means for transmitting an intermediate RSVP message before the second RSVP
3 message, from the destination entity to the source entity reserving resources from the des-
4 tination entity to the source entity.

1 46. (Previously Presented) A computer network, comprising:

2 a source entity transmits a first RSVP message to a destination entity;

3 a router allocates resources from the source entity to the destination entity, in re-
4 sponse to the first RSVP message, and the allocated resources are not made available;

5 the destination entity transmits a second RSVP message to the source entity;

6 the source entity generates a ring signal;

7 the destination entity transmits a third RSVP message in response to the ring sig-
8 nal; and

9 the router makes available the allocated resources.